

light-emitting diode (LED)

Semiconductor (often a combination of gallium, arsenic and phosphorous or gallium and nitrogen) containing an *n* region (where electrons are more numerous than positive charges) separated from a *p* region (where positive charges are more numerous than negative charges). Upon application of a voltage, charges move and emission of ultraviolet, visible or infrared radiation is produced each time a charge recombination takes place. Although a LED emits incoherent monochromatic light, normally a very narrow *frequency* range is obtained.

Note 1: This effect is a form of electroluminescence.

Note 2: The colour depends on the semi-conducting material used, and can be ultraviolet, visible or infrared.

Note 3: Organic light-emitting devices (OLEDs) contain diodes made of small molecules or made of polymeric materials. The latter are sometimes called PLEDs.

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